DOCUMENT RESUME

ED 045 185 PS 003 441

AUTHOR Witt, Peter A.; Gramza, Anthony F.
TITLE Position Effects in Play Equipment Preferences of Nursery School Children.
INSTITUTION Illinois Univ., Urbana. Children's Research Center.
SPONS AGENCY Illinois State Dept. of Mental Health, Springfield.; National Inst. of Mental Health (DHEW), Bethesda, Md.; Office of Education (DHEW), Washington, D.C.
PUB DATE [69]
GRANT OEG-1777-032
NOTE 7p.
AVAILABLE FROM Peter A. Witt, Motor Performance and Play Research Laboratory, Children's Research Center, University of Illinois, Champaign, Illinois 61820

EDRS PRICE EDRS Price MF-$0.25 HC-$0.45
DESCRIPTORS Behavior Patterns, Environmental Influences, *Equipment Utilization, *Nursery Schools, Observation, *Play, *Preschool Children, Research Methodology, *Spatial Relationship

ABSTRACT

With reference to the need for delineation of parameters operative in children's play, the position preferences of four groups of nursery school subjects were studied in a laboratory playroom. A large and small trestle were interchanged between center and corner positions in a series of play sessions. The frequency with which the subjects used trestles in each position was recorded. Results revealed a significant difference between sessions for three of the four groups of children tested, indicating that the trestle in the center position received more usage than the trestle placed in the corner position. In addition, the large trestle placed in the center of the room received even greater usage than the small trestle in this favored position. The interaction of position and trestle size was noted, along with the importance of studying other specifiable parameters affecting a child's use of play equipment. Results of additional research in this area could have implications for unobtrusively modifying children's play behavior patterns by the purposeful positioning of equipment. (Author/NH)

ED045185

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Position Effects in Play Equipment Preferences of Nursery School Children[1]

Peter A. Witt[2] and Anthony F. Gramza[2]

Children's Research Center

University of Illinois

The position preferences of four groups of nursery school Ss were studied in a laboratory playroom. A large and small trestle were interchanged between center and corner positions in a series of play sessions. The frequency with which Ss used trestles in each position was recorded. Results revealed a significant difference between sessions for three of the four groups of children tested indicating that the trestle in the center position received more usage than the trestle placed in the corner position. In addition, the large trestle placed in the center of the room received even greater usage than the small trestle in this favored position. The interaction of position and trestle size was noted along with the importance of studying other specifiable parameters affecting a child's use of play equipment.

PS003441

Investigation of the parameters affecting a child's choice of play equipment is an important, though largely neglected area of inquiry. There is need for delineation of specific parameters operative in eliciting and modulating children's play. Such parameters include the stimulus variables of play objects, as well as the variables of context and manner in which play objects are presented to children. Typically, experimental data relevant to this subject has been derived from situations far removed from the actual play milieu of a child. There is a paucity of research using quantitative experimental methodology to address relevant questions in actual play situations of children. Illustrative of this problem is the fact that no experimental analysis of the role of equipment position on the equipment use patterns of children has been found.

Recently, Gramza & Witt (1969) conducted a block play study with normal

preschool children which stressed the interaction of color and position in the subjects block choices. In this study blocks positioned in the outer piles of a four-pile semi-circular spatial array seemed to be more frequently chosen during a semi-controlled free play period. The purpose of this paper is to report other evidence of position preferences found in a study conducted with nursery school children in a playroom situation.

Method

Two trestles (one 8 1/2 feet high and the other 6 feet high) were placed in a playroom (measuring 21 ft. x 22 ft.) along with a variety of other play equipment. Four groups of nursery school Ss played with this equipment for 15 minutes on five or six occasions (depending on the group) over a three week period. Groups I and II each contained ten Ss, while Groups III and IV contained eight Ss each. Only seven Ss from Group IV were used in the analyses as one S was absent four of the five sessions in which data was collected. The average ages of Ss in Groups I through IV was 4.7, 4.9, 3.8, and 3.7 years respectively.

During sessions designated as type "A", the large trestle was placed in the center of the playroom while the small trestle was placed in a corner of the room. During sessions designated as type "B", the trestles were switched in position. The trestles were approximately seven feet apart at their closest point in each session. A schedule of room arrangements for each group is presented in Table 1.

A fisheye lens camera recorded the position of each subject every ten seconds (Herron & Frobish, 1969). A frequency count was made of the number of times each S was touching or playing on each piece of equipment.

Specifically, the number of times each S used the large trestle and small trestle during each session was noted.[3]

Results and Discussion

Data were analyzed for each group by a Ss x sessions analysis of variance. Each Ss score for a particular session was calculated by subtracting the frequency of small trestle usage from the frequency of large trestle usage. Missing data due to an occasional Ss absenteeism were replaced with the mean of the Ss trestle behavior in sessions showing similar room arrangements. Ten percent of the data were missing for Groups I and IV, five percent for Group III and 15 percent for Group II. Session means for the four groups are presented in Table 1 along with results of the analysis of variance. Groups, I, III and IV showed significant differences in session means.

Post hoc analysis using Duncan's New Multiple Range Test (Edwards, 1968, p. 131) showed that for Group I, Session 1 differed significantly from Sessions 4 and 6; in Group III, Session 5 differed significantly from Sessions 3 and 1 and for Group IV, Sessions 1, 3, and 4 were significantly different from Session 5.

All of these differences indicated that sessions with arrangement type "A" differed from sessions with type "B" arrangement and that the center item in each arrangement was more frequently chosen than the corner item. Group II showed no overall significance so no post hoc analysis was performed. Group II showed a marked preference for large trestle in every session. The difference in trestle positioning did not seem to

affect this preference pattern. Separate analyses showed no sex or age differences in equipment usage patterns for any of the four groups.

Orthogonal comparisons were used to compare type "A" sessions with type "B" sessions for Groups I, III, and IV (Winer, 1962, p. 65). Using this approach, the two types of room arrangements differed significantly from each other for Groups I, III and IV. ($F=11.6$, df 1/54, $p<.01$; $F=5.09$, df 1/36, $p<.05$; $F=6.97$, df 1/24, $p<.05$ respectively). Thus, although for a given group each type "A" session did not differ significantly from each type "B" session, taken as a whole the two room arrangements differed significantly. The basic conclusion drawn from these two approaches was that whatever item occupied the center position in the playroom received the most use. In addition it was noted that although the center was the more popular position, it was even more popular when the large trestle occupied that position than when the small trestle occupied it. Evidence for this can be seen from the relative magnitudes of the session means and the overall group means (Table 1). Thus, the large trestle was slightly more popular in an overall sense than the small trestle although this latter difference was not statistically significant.

From the above it was concluded that for three of the four groups studied in our playroom situation, position (center vs. corner) played a role in trestle preference and there were additional factors such as trestle size which further modified and patterned such preferences. It is not immediately evident why Group II differed so markedly from the above findings.

This investigation suggests further studies using different pieces of apparatus, different room arrangements, and different age groups. Studying different arrangements could be particularly important in determining the most and least popular overall positions in a given play area. Results of additional research in this area could have implications for unobtrusively modifying children's play behavior patterns by the purposeful positioning of equipment.

Footnotes

[1]This investigation was supported in part by a research grant to the Motor Performance and Play Research Laboratory via the Adler Zone Center by the Department of Mental Health of the State of Illinois and by the United States Public Health Service Research Grant No. NB-07346 from the National Institute of Mental Health and United States Office of Education Grant No. OEG 1777 (032).

[2]Reprints may be obtained from Peter A. Witt, Motor Performance and Play Research Laboratory, Children's Research Center, University of Illinois, Champaign, Illinois 61820.

[3]Appreciation is expressed to Lance Wuellner and Kathryn Karlsson for collection and coding of the data used in this study.

References

Edwards, A. L. Experimental design in psychological research. (3rd edition) New York: Holt, Rinehart and Winston, Inc., 1968.

Gramza, A. F. and W-tt, P. A. , Choices of colored blocks in the play of preschool children. Perceptual and Motor Skills, 1969, 29, 783-787.

Herron, R. E. and Frobish, M. J., Computer analysis and display of movement patterns. Journal of Experimental Child Psychology, 1969, 8, 40-44.

Winer, B. J., Statistical principles in experimental design. New York: McGraw-Hill Book Company, 1962.

Table 1

Schedule of Room Arrangements,[1] Group Means, and Analysis of Variance

	Group			
Session	I	II	III	IV
1	-5.40B	7.70B	-5.25B	-3.71B
2	3.40A	4.20A	2.75A	*[2]
3	.00B	4.10B	-5.50B	-2.86B
4	4.60A	8.10A	.88B	-2.43B
5	-2.00B	8.50B	14.00A	10.43A
6	6.40A	11.20A		
Overall Mean	1.17	7.30	1.03	1.00
Analysis of Variance				
F	2.39	.16	2.36	5.64
df	5/45	5/45	5/28	3/18
P	=.052	>.10	=.078	<.01

[1] A equals arrangement with large trestle in center and small trestle in corner. B equals arrangement where trestles are reversed.

[2] Data not recorded due to camera failure.